

# Comparisons of Job Characteristics

Focus Occupation: **Materials Scientists (19-2032)**

Associated Occupation: **Forensic Science Technicians (19-4092)**

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

## Knowledge

Similarity of Focus Occupation to Associated Occupation: 51

Focus Occupation: Materials Scientists (19-2032)

Associated Occupation: Forensic Science Technicians (19-4092)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Chemistry	4.8	13.1	23.3	>>	Current knowledge level is likely more than sufficient
Clerical	7.3	12.9	8.4	<<	Extensive education and/or training may be required
Law and Government	5.9	12.9	4.4	<<	Extensive education and/or training may be required
Public Safety and Security	6.9	12.0	6.2	<<	Extensive education and/or training may be required
Biology	3.7	9.3	2.4	<<	Extensive education and/or training may be required
Medicine and Dentistry	3.7	6.0	2.5	<<	Extensive education and/or training may be required
Geography	3.9	5.7	5.3	0	Current knowledge level may be sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Skills

Similarity of Focus Occupation to Associated Occupation: 81

Focus Occupation: Materials Scientists (19-2032)

Associated Occupation: Forensic Science Technicians (19-4092)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Critical Thinking	10.8	14.1	13.8	0	Current skill level may be sufficient
Speaking	10.8	13.6	12.9	0	Current skill level may be sufficient
Writing	9.2	13.5	12.2	<	A higher skill level may be required
Complex Problem Solving	9.1	12.6	12.0	0	Current skill level may be sufficient
Active Learning	8.7	11.2	11.2	0	Current skill level may be sufficient

Instructing	7.8	10.6	8.1	<<	Extensive development of skills in this area may be required
Science	4.5	9.8	16.8	>>	Skill level is likely more than sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 91			
Focus Occupation: Materials Scientists (19-2032) Associated Occupation: Forensic Science Technicians (19-4092)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Flexibility of Closure	7.8	16.0	10.6	<<	Extensive improvement in abilities may be required
Deductive Reasoning	10.6	15.1	13.8	0	Current ability level may be sufficient
Near Vision	11.1	15.1	11.8	<<	Extensive improvement in abilities may be required
Problem Sensitivity	11.1	14.4	13.5	0	Current ability level may be sufficient
Inductive Reasoning	10.2	14.3	14.1	0	Current ability level may be sufficient
Information Ordering	9.9	12.9	11.6	<	Some improvement in abilities may be required
Far Vision	7.8	12.5	7.6	<<	Extensive improvement in abilities may be required
Category Flexibility	9.0	12.0	11.9	0	Current ability level may be sufficient
Speed of Closure	5.9	11.2	6.6	<<	Extensive improvement in abilities may be required
Perceptual Speed	7.4	11.1	7.6	<<	Extensive improvement in abilities may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common		Similarity of Focus Occupation to Associated Occupation: 85	
Focus Occupation: Materials Scientists (19-2032) Associated Occupation: Forensic Science Technicians (19-4092)			
Work Activities		Exclusivity of Activity	
Adhere to safety procedures		12	
Advise governmental or industrial personnel		28	
Analyze chemical experimental, test, or analysis data or findings		69	
Analyze scientific research data or investigative findings		27	
Classify plants, animals, or other natural phenomena		69	
Collect scientific or technical data		30	
Communicate technical information		4	
Conduct laboratory research or experiments		57	

Conduct standardized qualitative laboratory analyses	62
Conduct standardized quantitative laboratory analyses	62
Confer with engineering, technical or manufacturing personnel	25
Confer with scientists	54
Develop or maintain databases	30
Develop tables depicting data	33
Explain complex mathematical information	30
Maintain records, reports, or files	5
Make decisions	24
Prepare reports	8
Prepare technical reports or related documentation	22
Record test results, test procedures, or inspection data	48
Use chemical testing or analysis procedures	54
Use computers to enter, access or retrieve data	3
Use hazardous materials information	35
Use knowledge of investigation techniques	16
Use knowledge of materials testing procedures	70
Use laboratory equipment	60
Use mathematical or statistical methods to identify or analyze problems	30
Use physical science research techniques	68
Use quantitative research methods	35
Use relational database software	26
Use scientific research methodology	21
Use spreadsheet software	18
Use word processing or desktop publishing software	17

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Tools and Technologies that Both Occupations Have in Common

Similarity of Focus  
Occupation to Associated  
Occupation: 38

**Focus Occupation: Materials Scientists (19-2032)**  
**Associated Occupation: Forensic Science Technicians (19-4092)**

Tools and Technologies	Exclusivity
Computers	1
Content authoring and editing software	1
Data management and query software	1
Indicating and recording instruments	2
Industry specific software	1
Information exchange software	1
Laboratory mixing and stirring and shaking equipment and supplies	19
Length and thickness and distance measuring instruments	2
Light and wave generating and measuring equipment	4
Network applications software	1
Power tools	2

Spectroscopic equipment	10
Temperature and heat measuring instruments	6
Viewing and observing instruments and accessories	4
Vision protection and accessories	3
Weight measuring instruments	7

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.